Analysing the potential for further urban densification: a case study for the Netherlands

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Chair: Mats Wilhelmsson

Speaker

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Analysing the potential for further urban densification: a case study for the Netherlands

Author(s) - Presenters are indicated with (p)

Jip Claassens (p), Eric Koomen, Bart Rijken

Abstract

Urban areas in the Netherlands are rapidly transforming. Many new houses have been built to replace e.g. vacant industrial buildings or fill under-used sites, but it is unclear whether such transformations can accommodate the projected growth in housing stock. This study analyses the spatial and economic feasibility of further intensification. It focusses on quantifying the costs and benefits of two types of densification: changing the main function of current urban areas (e.g. from industrial to residential), or densifying these areas (i.e. adding extra housing units to existing residential areas). In order to quantify the different components of these transformation costs, a literature study and interviews with sector experts were conducted. These main factors influencing the local costs and benefits for densification include: actual land-use, building-type, building age, soil contamination, accessibility, and others.

In cooperation with the municipality of The Hague, a case study was set up to analyse a selection of potential transformation sites in the city. This case study aided in revealing the different costs and benefits of transformation projects. Using the insights gained in the literature review and case study analysis and applying a spatially-explicit modelling approach (Land Use Scanner), we simulated potential transformation under different socio-economic scenarios. In this approach the potential for transformation was calculated based on current land-use, zoning regulations, building characteristics, transformation costs and other location-specific characteristics related to for example local accessibility. These suitability scores were used in combination with the regional projected housing demand to find the most likely areas for urban densification/transformation. Furthermore, this tool is used to evaluate the implications of relevant alternative policy measures.

Dr. Katarzyna Kopczewska
Assistant Professor
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The price for subway access: Spatial modelling of office rental rates in London

Author(s) - Presenters are indicated with (p)

Katarzyna Kopczewska (p), Anna Lewandowska

Abstract

The econometric estimation of rental prices for business real estate may help in its proper valuation. As this paper shows, a-spatial hedonic valuation methods are not as efficient as spatial ones. For point geo-located business properties, one can construct neighbourhood relations as well as give the distances to public transport stations and use this spatial information in valuation estimation. Spatial estimation with the Durbin component diminishes the impact of hedonic / random terms and captures the features of neighbourhoods. The study of rental transitions for offices in London in 2015 show that every next 100 m to metro costs an extra 0.5 € per ft2 per year.

Full Paper - access for all participants

Prof. Mats Wilhelmsson
Full Professor
Royal Institute of Technology

Risk Assessment of the Housing Segment

Author(s) - Presenters are indicated with (p)

Mats Wilhelmsson (p)

Abstract

It is well known that risk factors influence how investment portfolios perform from a bank's perspective; therefore, a thorough risk assessment is vital to such big investments like in

housing market. The aim of this paper is to analyze the risks from housing apartments in different dimensions. We are using Stockholm, Sweden, owner-occupied apartment market as a case study. By applying quantitative and systems engineering methods, we are (1) establishing the relation between overall housing market and several housing segments, (2) analyzing results from the quantitative model and (3) finally providing a feasible portfolio regarding risk control based on given data. The goal is to pinpoint how different housing segment factors can reveal risk towards overall market and offer better outlook for risk management when it comes to housing apartments in Stockholm, Sweden.